No 27
246 Pace

1
NO. 27

Passed March 9th 1827
W. R. H.

An

Inaugural Dissertation

On

Cholera Infantum

by

Allen Knight

of

Pennsylvania

Nurg.

Affection Hypertrophicum.

The cards of the University prepare a constitution for the organization of a society to promote an zeal for some medical subject. A thesis selected for that purpose the disease called Affection Hypertrophicum or enlargement of the heart. The extensive prevalence of this disease and the great mortality occasioned by it give it a strong claim to the consideration of the physician. Upon inquiry it is found to be warm season of the year, and is somewhat so frequently confined to the warm and temperate climates of these cities. On this fact, it is sure that since the cultivation of the Lagerbier under strength the stomach and the enjoyment of the patient

Cholera Infantum

The rules of this University requiring candidates for the degree of Doctor of Medicine to prepare an essay on some medical subject, I have selected for that purpose the disease called Cholera Infantum, or summer epidemic of children. The extensive prevalence of this disease, and the great mortality occasioned by it, give it a strong claim to the consideration of the physician. As an epidemic it is peculiar to the warm season of the year, and its prevalence is principally confined to the warm and impure atmosphere of large cities. In this city, it is said, that since the introduction of the Schuylkill water through the streets, and the improvement of the police

regulations, it is much less prevalent, and fatal, than it previously had been. Yet it appears from the bills of mortality, that the number of deaths from this disease, average more than two hundred per annum, a degree of mortality exceeding that from any other disease in proportion to the period of its duration.

This epidemic makes its appearance in this city in June, is at its heigth in July, continuing to a less extent through August, and is nearly extinct by the middle of September, making the period of its duration, little more than one fourth of the year.

It is always aggravated by an increase of temperature, also by sudden changes in the atmosphere from heat to cold,

and from dryness to humidity.
Children from early infancy until they are three, or four years old, are liable to be effected by this disease; but those at the period of dentition, or from the fifth to the twentieth month are more particularly subject to its attack.

Symptoms.

The summer epidemic of children appears in several different forms, and is attended with a diversity of symptoms. They may however all be reduced to some of the following heads.

1st Bilious Diarrhoea
2nd Acute Cholera
3rd Visceral Inflammation
4th Chronic Bowel Complaint

Each stage is marked by its

peculiar symptoms.

1st Bilious Diarrhoea.

This is the mildest form of the disease, and consists in an increased frequency of stools, the discharges being generally of a bilious character. In many cases this occurs and passes off in a few days without much general indisposition.

In other cases it is attended with febrile symptoms, the tongue is furred, the skin dry, and the appetite impaired. When the fever runs high, the stools become more vitiated and lose their bilious appearance.

The disease then begins to assume the character of some of the other forms, the most common of which is, the Acute Cholera.

It is this form of the disease that gives the title to the epidemic. It consists in a violent vomiting and purging. In some cases it comes on suddenly without any previous indisposition; and in others, it is preceded by the diarrhoeal form of the disease. When milk or other aliment has been received into the stomach, it is first rejected in a sour, and coagulated state; some bilious matter is occasionally thrown off, but for the most part nothing but mucus or slime, and the bitiated secretions from the stomach are thrown up. The stools also present an altered appearance. Partially digested food slime or mucus is discharged: sometimes they are green, or yellow, and

very fetid. Mucus is very frequently discharged mixed with blood; and at other times a colourless fluid is evacuated
The quantity is also various; in some the secretion from the bowels is copious, and in others small in quantity. During the period of vomiting and purging, there is great prostration of strength, the pulse is small and weak, the extremities are cold, while the pulsations of the arteries of the head (the temporal and carotid) are full and strong, the head, breast and epigastrium are warmer than natural.
When the vomiting is violent, the eyes become suffused, delirium, stupor, or convulsions, occasionally

occur. The violence of the disease frequently brings on spasm of the abdominal muscles, and lower extremities.

This form of the disease runs its course in a short time.

In some cases it terminates in convulsions and death, in twenty four hours. In others it is succeeded by a general febrile state of the System, that continues a few days becoming gradually milder and then entirely subsiding. But it frequently terminates in the third stage of the disease, Visceral Inflammation.

This stage of the disease is attended with a swelling of the abdomen, extreme soreness of the epigastrium, restlessness, violent crying, and a

general expression of extreme pain.
The pulse is active, the skin hot, and the tongue dry, with constant thirst.
The discharges from the bowels are mucus or slime, sometimes bloody and frothy, at other times a dark green coloured matter is discharged.
Severe griping pains, wakefulness, delirium, and a countenance expressive of the greatest anguish is often exhibited by the little sufferer.
This state of acute inflammation does not continue long. For if resolution is not effected by the remedies employed, it soon terminates in structural derangement of the viscera, or is succeeded by chronic inflammation of the stomach and bowels, which constitutes the fourth stage, of the disease.

Chronic Bowel Complaint

In this stage of the disease there are frequent stools, sometimes as often as every hour in the day; and the disease resisting every effort that can be made, is often protracted to six, or even eight weeks duration. The stools exhibit all the various appearances that have been mentioned in the other forms of the disease. In addition to which, there is in some cases discharges that resemble the feter of rotten eggs; in other cases a dark pitchy looking matter is evacuated.

The extremities are generally cold, the tongue, is dry and coated, or dry, smooth and polished.

As the disease progresses. the general

strength becomes more prostrated and extreme emaciation takes place. The eyes are dull and sunken, the nose sharp, the lips shriveled, the skin of the fore-head loose, and the Hippocratic countenance strongly marked. The skin is either cool, dry and harsh, or bedewed with a viscid moisture, and the fleshy parts of the body are loose and shriveled. At this advanced state of the disease, the gums are covered with sordes, the mouth is affected with aphthae, excoriations about the anus, and an edematous swelling of the extremities.

These symptoms are generally followed by a fatal termination, which arises either from effusion on the brain, or from structural derange=

ment of some of the abdominal viscera

Causes

The principal agent in the production of this epidemic is atmospherical heat. That this is the cause is demonstrated by the fact, that the disease regularly makes its appearance upon the occurrence of very high temperature, and always subsides when the atmosphere becomes cool. There appears to be a difference of opinion amongst medical men in respect to the manner in which heat acts in the production of this disease. A number of respectable authorities consider it as acting indirectly by the agency of miasmata, and that cholera is a modification of bilious fever the "febris introversa" of Sydenham

while others consider it as acting directly by its immediate stimulating effect on the system.

The following circumstances appear to favour the latter, and stand opposed to the former of these opinions.

1st The disease makes its appearance early in the season, before those diseases that are acknowledged to be caused, by miasmata.

2nd Miasmatic diseases are generally most prevalent in the country, and less frequent in the city while directly the reverse is the case with cholera.

There are several secondary or adventitious causes that tend to excite the disease.

1st Dentition is the most important. The tendency to febrile excitement that

exists during this period of infancy renders the system more liable to disease. Hence it is, that a large proportion of the children in the city that are cutting teeth during the summer months, are subject to some of the forms of this disease.

2nd Fruit. It is a very popular opinion, that the summer disease is caused by the early fruit eaten to excess, or in an unripe state.

That this may occasionally excite the disease into action cannot admit of a doubt.

But when we consider, that the children most subject to this disease are those, who from their helpless state have the least chance to have access to fruit, we must attribute but a very

limited agency to this cause.

3rd Repelled Eruptions.

One of the first morbid effects of a high temperature of the atmosphere is the production of cutaneous eruptions. The lichen tropicus or prickly heat, is very common amongst children upon the first commencement of very warm weather.

I am informed by a physician, who has particularly directed his observations to the fact, that a large portion of the cases of cholera that have come under his notice have been previously affected with this disease of the skin, which had disappeared sometime previous to the occurrence of the bowel affection. It would however probably be more correct to consider both these

affections as arising from a common cause than to ascribe the origin of the latter to the former.

The causes of this epidemic appear to have all their effects directed to the chylopoetic viscera, the liver, stomach and bowels are the parts principally affected.

The stimulating effect of heat, when moderate in degree, increases the secretion of the liver, but when it extends to a higher degree, or continues a longer time induces debility, or a torpor of the liver, and a deficiency or depraved state of bile are the consequences.

The stomach and bowels are also affected directly by the stimulus of the remote and exciting cause of the disease, and indirectly from the event

of a healthy bilious secretion whereby the power of digestion and assimilation becomes impaired.

Treatment

1st Bilious Diarrhoea.

This being in many cases a disease, in which the spontaneous efforts of nature to relieve the system would be efficient; very little medical treatment is required. A mild laxative of magnesia, or syrup of rhubarb, followed by a gentle tonic, is often sufficient; but when it is attended with thirst, a furred tongue, impaired appetite, and other evidence of febrile excitement, an emetic of ipecacuanha should be premised. When the discharge from the bowels indicate

either a deficiency or a depraved state of the alimentary secretion a full dose of calomel will be useful.

When the skin is dry, and harsh, the warm bath, and combinations of opium with ipecacuanha, exhibited so as to excite a diaphoresis, will very much aid the cure

2nd Cholera Infantum

Emetics, from their effects in removing any irritating matter from the stomach, and more particularly their tendency to relieve congestion in the portal system, appear to be peculiarly adapted to this stage of the disease.

Professor Chapman in his lectures, speaks favorably of them, and states, that "when there is no reason to suspect inflammation of the stomach

and bowels they may be safely and efficiently employed".

Those physicians who have used emetics in this disease, have generally preferred ipecacuanha, as being milder, and less liable to excite irritation in the stomach.

A late writer in most positive terms, gives a decided preference to tartar emetic, which he exhibited in doses of half a grain, every half hour, to an infant. Not having any experience in this base practice I am not prepared to offer an opinion of its propriety.

Anti-emetics. Although the exhibition of an emetic will often superceede the necessity of any other means to allay the vomiting, yet it often

happens that from the exhausted state of the patient, or the presence of inflammation that emetics are inadmissible. When this is the case recourse must be had to means calculated to soothe the irritability of the stomach; for this purpose lime water and milk, the alkaline and effervescing mixtures are recommended; strong coffee, an infusion of burnt oatmeal and external applications of various kinds, fomentations cataplasms of mint or aromatics, sinapisms, blisters, the warm bath and anodyne injections, are amongst the means used to fulfil this indication.
When the system is much exhausted active stimulants are required, as brandy toddy, or spiced brandy &c.

Purgatives. When the vomiting has ceased and the system has reacted sufficiently to admit of purgatives, they become the next important part of the treatment.

Physicians generally appear to be agreed, that for this purpose calomel is the most efficient article, the facility with which it may be given to children, and its peculiar effects on the biliary system renders it preferable to any other purgative medicine in this disease.

Diaphoretics. After sufficiently evacuation of the bowels by purgative medicine, small doses of opium, combined with antimony, or ipecacuanha, and small doses of calomel have a very salutary effect.

Visceral Inflammation

In the third form of the disease or when visceral inflammation exists blood-letting becomes necessary. General blood-letting by venesection, or local bleeding by cups, or leeches, to the epigastrium, should be used promptly: in many cases it becomes necessary to repeat the operation: In determining the propriety of this measure, the pulse must not be our only guide, the apparent violence of the pain, degree of tenderness wince upon pressure will afford the best criterion.

Purgatives are very important in this form of the disease, calomel in divided doses followed by castor oil or a solution of epsom salts,

should be repeated until a free operation is effected.
Cold applications to the epigastrium and other abdominal regions are very useful, when there is preternatural heat, and dryness, of the skin of those parts, they reduce the morbid temperature, and lessen inflammation. Enemata of cold water are probably beneficial. Emollient and tepid applications are proper, when there is no marked increase of temperature, for this purpose a bladder containing tepid water applied on the abdomen has a tendency to relax the cutaneous vessels and produces soothing effects on the disease.
The warm or tepid bath is calculated to answer the same useful

purpose. Blisters are amongst the means of subduing local inflammation which are often applicable in this form of the disease.

Mucilaginous drinks as a solution of gum arabic, or an infusion of flax-seed are proper. Diaphoretic medicines may often be administered with advantage, after bleeding and purging have reduced the force of the inflammation.

When the inflammation is subdued the subsequent state of debility calls for support by appropriate tonic medicines and nutritious diet.

Chronic Bowel Complaint

In this form of the disease the indications are 1st To restrain

the excessive and debilitating discharge

2nd To alter and equalize the general action of the system.

3rd To support the tone of the system. For answering the first indication a great variety of astringents have been used, the preparations of chalk, kino, blackberry and dewberry root, logwood the galls, alum, opium and sugar of lead, each of these respective articles has been found useful in this form of the disease. In some cases from the protracted nature of the disease, it becomes necessary to use several of them in succession before they have the desired effect.

The second indication

or changing the action of the system, is an essential part of the treatment. While the internal vessels remain in a state of congestion, and those of the surface in a state of collapse or deficient excitement, it will be in vain to attempt to check the disease by astringents.

The most efficient means to fulfil this indication is calomel in very small doses in the manner recommended, by Dr. Miller of New York, and more recently by Ryes of England. The happy results of this practice is in many instances truly astonishing. The warm bath and friction, to the skin will be found useful auxiliary means.

Would not the Nitro-muriatic

acid bath (of Scott) be useful in this state of the disease?
Dr Chapman in his lectures on chronic dysentery suggests the propriety of this remedy, and it would seem equally adapted to the chronic bowel complaint.

The third indication namely, supporting the tone of the system requires the usual treatment for that purpose, columbo, the preparations of bark, and particularly the sulph. quinine, and wine, also suitable articles of diet; and external stimulants. tonic bath, bark jacket &c are all adapted to this purpose.

The prophylactic treatment consists in country air, free ventilation cold bath, attention to cutting of

the gums, when the state of dentition may require it, to avoid repelling cutaneous eruptions, attention to diet, breast milk, milk and water sweetened with white sugar, arrow root, ground rice and other farinaceous substances; occasionally salt meat, or fish, and when the digestive organs are weak aromatics should be used.
The sleep should be accommodated to the vicissitudes of the weather, the feet to be guarded, and flannel worn on the abdomen.

The end.